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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
9/921,113	08/01/2001	Colm V. Cryan	OIC-PT005	7077

3624 7590 07/30/2003

VOLPE AND KOENIG, P.C.  
UNITED PLAZA, SUITE 1600  
30 SOUTH 17TH STREET  
PHILADELPHIA, PA 19103

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AM/PM

AUG 01 2003

EXAMINER

LIN, TINA M

ART UNIT

PAPER NUMBER

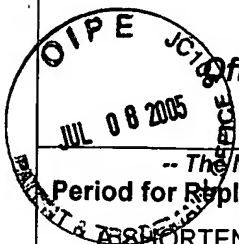
2874

VOLPE & KOENIG, P.C.

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

DOCKETED FOR 9/30/03 Response (for expedited handling)



# Office Action Summary

## Application

09/921,113

## Examiner

Tina M Lin

## Applicant(s)

CRYAN ET AL.

## Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

ABANDONED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

AUG 01 2003

Page 2

VOLPE & KOENIG, P.C.

### DETAILED ACTION

This Office action is responsive to applicant's communication submitted on 03 July 2003.

The applicant's arguments have been carefully studied and re-evaluated by the examiner. However, the addition of the limitation, each rod "each having only a single refractive index", was not present prior to amendment B filed on 03 July 2003, and therefore necessitated a new search. In view of further search, and the consequent discovery of a previously uncited prior art document, a new rejection is applied to the pending claims and set forth below. Therefore, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko. Maciejko discloses a drawn and fused preform comprised of all unclad fibers having different indices. Since the fibers disclosed by Maciejko are unclad, the core of the fiber would have one refractive index and it is the unclad fiber core that is used to draw the preform. (Column 2 Lines 53-60) Maciejko further discloses that the fibers are made of glass. Additionally, in Figure 1, it is shown that the rods being fused together and in direct contact with each other. But Maciejko fails to disclose the entire fiber to be a graded index fiber, a predetermined arrangement of the low and high index rods and an arrangement of index rods to

Art Unit: 2874

provide a desired refractive index distribution. Since Maciejko discloses arranging the fibers in a bundle, it would have been obvious at the time the invention was made a person having ordinary skill in the art to have arranged the fiber into a graded index fiber as required by the application the fiber bundle would be used for. (Column 1 Lines 63-70) Further, it is well known in the art that a graded index fiber will have multiple indices of refractions, since the definition of a graded index fiber is a fiber having many indices (i.e. a gradation from fiber center to periphery) and because Maciejko discloses a drawn preform to have different indices, it would have been obvious at the time the invention was made to a person with ordinary skill in the art to have placed additional rods in a predetermined arrangement with different indices in the perform to obtain the desired refractive index of a optical fiber.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko. as applied to claim 1 above, and further in view of U.S. Patent 6,091,872 to Katoot. Maciejko discloses a drawn, heated and fused preform with unclad fibers with a plurality of different indices. But Maciejko fails to disclose the low and high index rods to be formed of a polymer. However, Katoot et al. discloses an optical bundle drawn and fused (Column 9 Lines 13-15). Katoot further discloses the optical fibers to be made of glass or polymers. (Column 10 Lines 5-6) Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have formed low and high index rods with a polymer material in place of glass.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,360,372 to Maciejko. as applied to claim 1 above. Maciejko discloses a drawn, heated and fused preform with unclad fibers with a plurality of different indices. But Maciejko fails to

Art Unit: 2874

disclose a graded index fiber with a center located at a specified position, the fused fibers located in a predetermined pitch and an arrangement of fused fibers into an array. However, Maciejko does disclose array of in Figures 1 and 2 that show the fused fibers are also capable of being placed in an array. Therefore, it would have been obvious at the time the invention to a person with ordinary skill in the art to have a graded index fiber placed in a specific location and to have the fused fibers arranged in an array located in a predetermined pitch.

Applicant's arguments, Amendment "B", see paper number 10, filed 03 July 2003, with respect to claims 1-19 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent 4,360,372 to Maciejko.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. The addition of the limitation, each rod "each having only a single refractive index", was not present prior to amendment B filed on 03 July 2003, and therefore necessitated a new search and a new rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2874

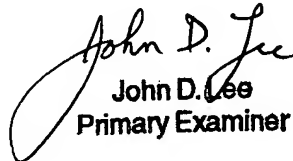
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

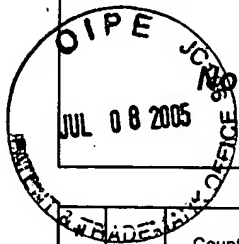
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M Lin whose telephone number is (703) 305-1959. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TML *am*  
July 29, 2003

  
John D. Lee  
Primary Examiner



# Notice of References Cited

Application/Control No. 09/921,113	Applicant(s)/Patent Under Reexamination CRYAN ET AL.	
Examiner Tina M Lin	Art Unit 2874	Page 1 of 1

## U.S. PATENT DOCUMENTS

		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-4,360,372	11-1982	Maciejko, Roman	65/402
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.